

(11) Publication number : **0 590 861 A2**

(12)

EUROPEAN PATENT APPLICATION

(21) Application number : 93307492.4

(51) Int. Cl.⁵ : **G07F 7/08, G06F 15/30**

(22) Date of filing : 22.09.93

(30) Priority : 29.09.92 US 953418

(43) Date of publication of application :
05.04.94 Bulletin 94/14

(84) Designated Contracting States :
AT BE CH DE ES FR GB IT LI NL SE

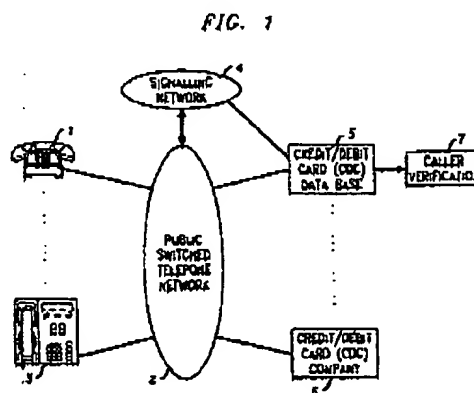
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(64) Secure credit/debit card authorization.

(57) This invention relates to methods for making a credit/debit card purchase without revealing the card number to the vendor (3) of services or goods. The card holder (1) is connected to a data base (5) and provides the card number, plus holder identity verification, to the data base. The data base then verifies whether the card holder is authorized to incur the expense of the purchase, and, if so, provides an authorization indication or code to the vendor (3); the card number cannot be derived from the authorization information, thus helping to preserve the secrecy of the card number.



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Technical Field

This invention relates to a method for authorizing a credit/debit card holder to purchase goods or services.

Problem

In recent years, telephone ordering of merchandise has become an increasingly common method of purchase. In a typical transaction, a caller calls a store, indicates the merchandise that is to be bought, provides his/her address for the delivery of the merchandise, and provides a credit/debit card (CDC) number. The vendor verifies that the CDC is valid and charges the purchase to that CDC. The vendor then sends the merchandise to the customer. A problem of this method of operation is that the customer must provide his/her CDC number to the vendor. This tends to compromise the secrecy of the CDC number which makes possible the fraudulent use of such a number. The possibility of such fraudulent use helps to keep the rates charged by credit card companies to the vendors high, and limits teletransaction usage.

Solution

In accordance with applicant's invention, an advance is made over the methods of the prior art by connecting a customer desiring to order merchandise to the data base of a CDC company or to its authorized agent such as a common carrier; the caller then provides the CDC number to the data base, which after checking the authorization of the CDC number, provides an authorization indication to a vendor. The vendor charges the credit card company for the purchase using the authorization code. Advantageously, the credit card number is only provided to the credit card company or carrier, not to the vendor.

In accordance with one feature of the invention, identification methods are used to identify the caller and only provide authorization for the purchase (transaction) if the caller is the owner of the CDC. In one specific embodiment of the invention, the caller is identified using voice recognition. Alternatively, or in addition, a personal identification number is used. Alternatively, or in addition, the caller is identified using automatic number identification (ANI) which is forwarded to the card company or agent as part of the caller identification.

In accordance with one feature of the invention, the authorization indication comprises an authorization code for tracking a purchase transaction. The authorization code contains one or more fields. One such field is used to identify the vendor and thereby simplify the process of billing for the credit company. Another field provides the name and/or address of the credit card holder to reduce the effort of the ven-

dor for obtaining this data. Another field specifies the dollar limit of the amount of credit being authorized for this transaction. Another field specifies a limit of the time for which such credit is being allowed. Another field specifies the date and time of the authorization.

Brief Description of the Drawing

FIG. 1 is a block diagram illustrating the operation of applicant's invention; and

FIG. 2 is a flow diagram of the steps of a method for implementing the invention.

Detailed Description

FIG. 1 is a block diagram of the operation of applicant's invention. A purchaser at a calling station 1 is connected via a telecommunications network 2, such as the public switched telephone network, to a credit/debit card (CDC) data base 5. The calling station provides to the data base 5 a CDC number, a personal identification number (PIN), and a sample of the caller's voice. The sample is routed to caller verification system 7 which is used to recognize the voice and to ensure that the recognized voice corresponds to the specified credit/debit card. The caller is then provided with new dial tone and calls the vendor 3. The telephone number of the vendor is passed from network 2 to CDC data base 5 using signaling network 4. The identity of the vendor is the final piece of data required by the CDC data base to provide the authorization code. This authorization code is passed from CDC data base 5 via signaling network 4 and network 3 to vendor 3. In one specific implementation of applicant's invention, the authorization number is provided over a D-channel of an integrated services digital network (ISDN) link to the vendor. Alternatively, this information may be provided using other signaling techniques such as dual tone multifrequency (DTMF) signaling.

After the vendor has received the authorization code, the vendor is connected to the calling station and receives verbal instructions from the calling station. These verbal instructions, such as for merchandise to be ordered, are associated with the received authorization number and the vendor then transmits via network 2 and signaling network 4, the authorization code plus merchandise and charge information to the CDC data base 5 to charge the customer appropriately. The charge is valid only if the authorization code and the vendor identification correspond and any restrictions such as dollar limit and time limit are satisfied. The CDC company 6 is connected via the network and optionally via a data link to the CDC data base to allow the data base to be updated, for example, when a credit card is found to have been lost.

The authorization may be simply a positive indication to the vendor, but in the preferred embodiment,

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the authorization includes an authorization code.

In accordance with one feature of the invention, the authorization indication comprises an authorization code for tracking a purchase transaction. The authorization code contains one or more fields. One such field is used to identify the vendor and thereby simplify the process of billing for the credit company. Another field provides the name and/or address of the credit card holder to reduce the effort of the vendor for obtaining this data. Another field specifies the dollar limit of the amount of credit being authorized for this transaction. Another field specifies a limit of the time for which such credit is being allowed. Another field specifies the date and time of the authorization.

FIG. 2 is a flow diagram of steps performed to practice applicant's invention. Initially, block 200, a CDC holder (CDCH) wants to make a teletransaction. Block 201 and its succeeding blocks illustrate a method wherein the CDCH initially calls the data base of a card company or its agent. Block 203 illustrates that the card company requests the card number, and a PIN or a voice sample, and validates the card and its user, this request may not be necessary if the caller's telephone station has been identified by an Automatic Number Identification (ANI) number forwarded to the data base, and matching the recorded telephone number for that CDC. The data base verifies the authorization of the CDC holder to incur the expense and prepares an authorization code for transmission to the vendor. If the CDCH is so authorized, the CDCH is then given a new dial tone and calls the vendor (block 205). Block 207 indicates that the CDCH orders the products/services from the vendor who has been automatically provided with the authorization code. Eventually, the CDCH disconnects (block 209) and the vendor charges against the card using the authorization code (block 211) if the transaction has been authorized and the time and dollar values are not exceeded. This can be performed either by the vendor filling out a credit ticket or by the vendor providing information which is immediately sent back as a data message to the CDC data base.

An alternate approach is illustrated in block 241 and its successors. Here the CDCH calls the vendor directly (action block 241). The vendor connects the CDCH to the card validator data base and the card validation is performed in a transaction between the calling station 1 and CDC data base 5. The transfer of calling station 1 to CDC data base 5 is performed by setting up a connection between the CDCH and the data base in such a way that it is impossible for the vendor to eavesdrop on this connection. The card is validated by the card validator using the card number, the PIN, and/or, if appropriate, voice recognition (action block 243). The CDCH is then returned to the vendor who is provided with an authorization code from the data base (action block 245). The CDCH then orders the products and the service against the

authorization code received by the vendor (action block 247) and the CDCH eventually hangs up (action block 249). The vendor charges against the CDC using the authorization code (action block 251).

Note that in both of these scenarios the credit/debit card number is not provided to the vendor who only receives the authorization code.

In another alternative arrangement, when a customer has selected his/her merchandise or service, the customer is connected to the CDC data base from a convenient station, possibly including a card reader, located in the vendor's store. After the CDC number has been entered and the transaction authorized, the authorization code is provided audibly or in video or printed form for the vendor, at the convenient station or at an associated terminal.

It is to be understood that the above description is only of one preferred embodiment of the invention. Numerous other arrangements may be devised by one skilled in the art without departing from the scope of the invention. The invention is thus limited only as defined in the accompanying claims.

Claims

1. In a data base (5) for authorizing a credit/debit card (CDC) expenditure, a method for authorizing a purchase of goods or services, comprising: responsive to receiving in said data base data (5) from a holder (1) identifying a specific CDC, determining whether said CDC is authorized to incur an expenditure; and responsive to a determination that said CDC is authorized to incur said expenditure, transmitting from said data base an authorization indication to a vendor (3) of said goods or services, the identification of said CDC not being derivable from said authorization code; wherein the identification of said CDC is not provided to said vendor.
2. A method as claimed in claim 1 wherein said authorization indication comprises an authorization code for tracking a purchase transaction.
3. A method as claimed in claim 2 wherein said authorization code comprises one or more of the following: a limit of allowed expenditure for a transaction, an identification of said vendor, date and/or time data, a time limitation for a transaction, the name of a holder of said CDC, and an address of a holder of said CDC.
4. A method as claimed in claim 1, 2 or 3 wherein said data received in said data base comprises data for verifying the identity of the user of said CDC.

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5. A method as claimed in claim 4 wherein said data for verifying comprises a personal identification number.
6. A method as claimed in claim 4 or 5 wherein said data for verifying comprises an automatic number identification of a caller station supplying said CDC identification. 5
7. A method as claimed in any preceding claim comprising the steps of: 10
 establishing a voice connection to voice recognition means for recognizing the identity of a caller; and
 using output of said voice recognition means to identify a user of said CDC. 15

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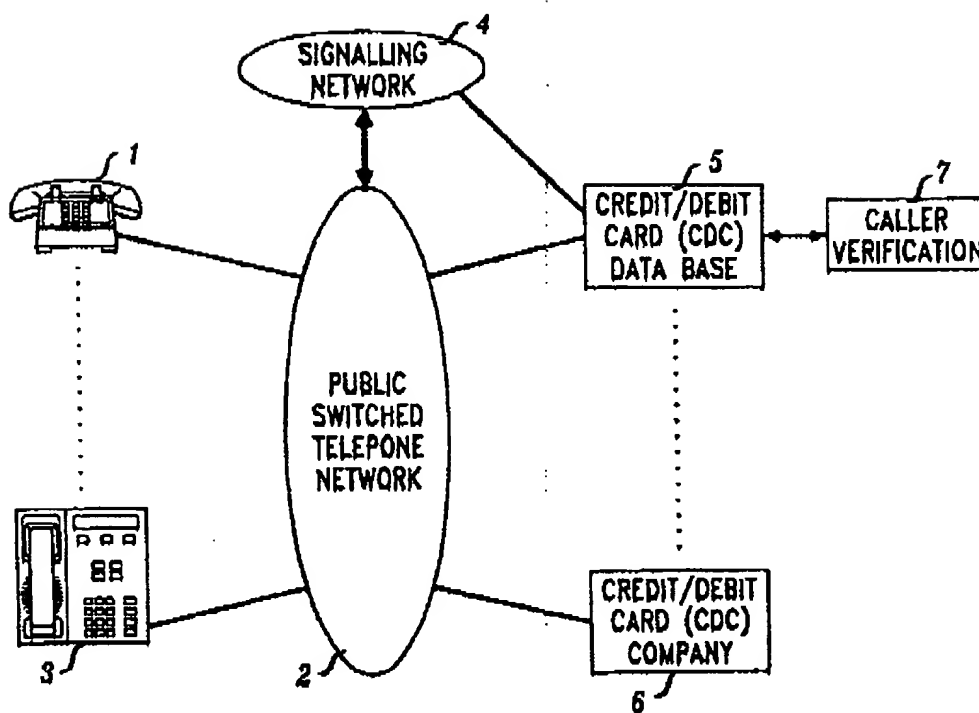
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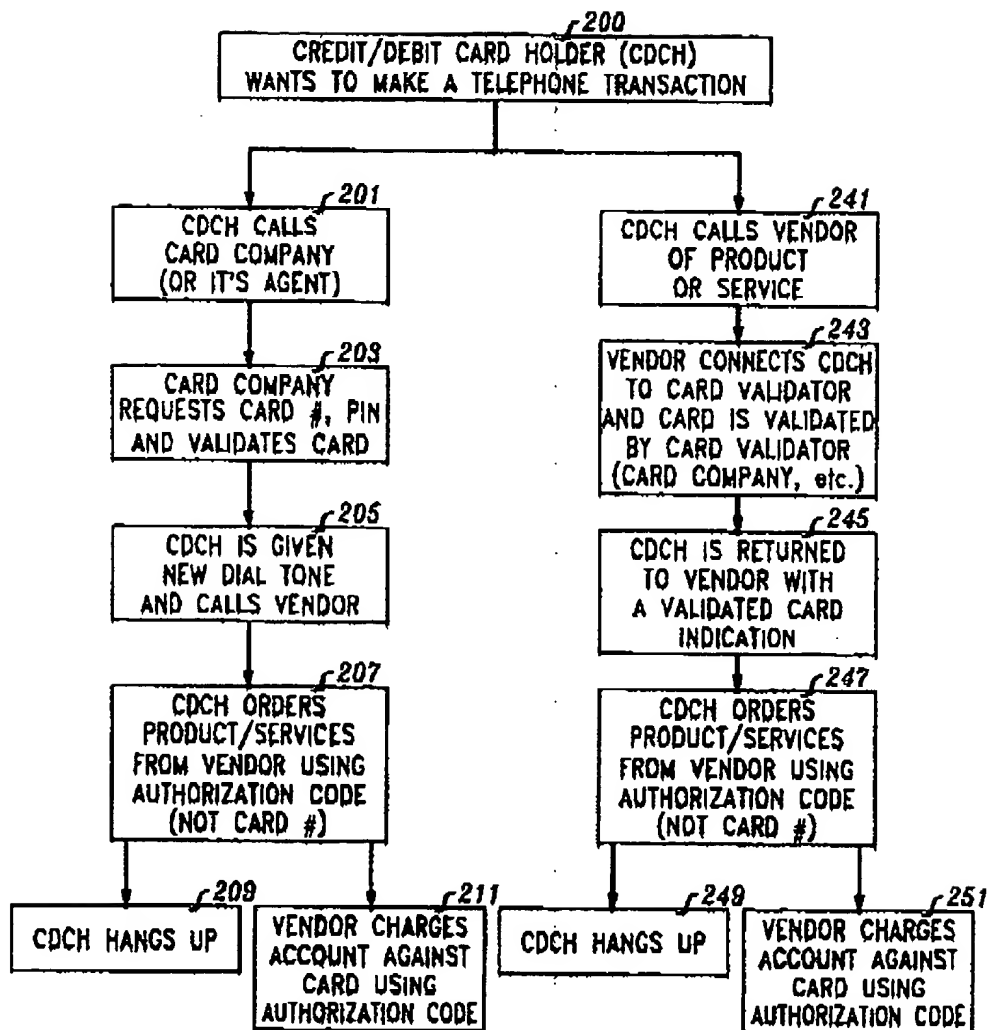
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FIG. 1



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FIG. 2



US Patent 5,838,812 Patent Family (Part)

Family: PDF Publication Pub. Date Filed Title

WO9841947A1 1998-09-24 1998-03-17 USE SENSITIVE TOKENLESS IDENTIFICATION SYSTEM

WO9815924A2 1998-04-16 1997-09-29 TOKENLESS BIOMETRIC AUTOMATED TELLER MACHINE ACCESS SYSTEM

WO9809227A1 1998-03-05 1997-08-27 TOKENLESS BIOMETRIC TRANSACTION AUTHORIZATION METHOD AND SYSTEM

WO9636934A1 1996-11-21 1996-05-17 TOKENLESS IDENTIFICATION SYSTEM FOR AUTHORIZATION OF ELECTRONIC TRANSACTIONS AND ELECTRONIC TRANSMISSIONS

WO0214984A3 2002-07-04 2001-08-17 TOKENLESS BIOMETRIC AUTHORIZATION OF ELECTRONIC COMMUNICATIONS

WO0214984A2 2002-02-21 2001-08-17 TOKENLESS BIOMETRIC AUTHORIZATION OF ELECTRONIC COMMUNICATIONS

WO0106440A1 2001-01-25 2000-07-20 TOKENLESS BIOMETRIC ELECTRONIC TRANSACTIONS USING AUDIO SIGNATURE

WO0067187C2 2002-03-28 2000-02-02 TOKENLESS BIOMETRIC ELECTRONIC REWARDS SYSTEM

WO0067187C1 2001-11-01 2000-02-02 TOKENLESS BIOMETRIC ELECTRONIC REWARDS SYSTEM

WO0067187A1 2000-11-09 2000-02-02 TOKENLESS BIOMETRIC ELECTRONIC REWARDS SYSTEM

WO0046737A1 2000-08-10 2000-02-02 TOKENLESS BIOMETRIC ELECTRONIC STORED VALUE TRANSACTIONS

WO0046710A1 2000-08-10 2000-01-31 TOKENLESS BIOMETRIC ATM ACCESS SYSTEM

WO0045320A1 2000-08-03 2000-01-31 TOKENLESS BIOMETRIC ELECTRONIC DEBIT AND CREDIT TRANSACTIONS

WO0045247A1 2000-08-03 2000-01-31 TOKENLESS BIOMETRIC ELECTRONIC CHECK TRANSACTIONS

WO0026849C2 2000-09-21 1999-10-29 TOKENLESS ELECTRONIC TRANSACTION SYSTEM

WO0026849A1 2000-05-11 1999-10-29 TOKENLESS ELECTRONIC TRANSACTION SYSTEM

US20050203841A1 2005-09-15 2005-04-18 Tokenless biometric electronic transactions using an audio signature to identify the transaction processor

US20050187843A1 2005-08-25 2005-04-18 Tokenless biometric electronic financial transactions via a third party identifier

US20040128249A1 2004-07-01 2003-12-11 System and method for tokenless biometric electronic scrip

US20040020982A1 2004-02-05 2003-07-14 Tokenless electronic transaction system

US20030105725A1 2003-06-05 2002-09-10 Tokenless identification system for authorization of electronic transactions and electronic transmissions

US20020174067A1 2002-11-21 2002-04-01 Tokenless electronic transaction system

US20020111917A1 2002-08-15 2002-04-10 Tokenless biometric electronic transactions using an audio signature to identify the transaction processor

US20010039533A1 2001-11-08 2001-06-11 Tokenless biometric electronic debit and credit transactions

US20010029493A1 2001-10-11 2001-05-03 Tokenless biometric electronic check transactions

US20010000535A1 2001-04-26 2000-12-06 Tokenless biometric electronic financial transactions via a third party identifier
 US6920435 2005-07-19 2002-04-10 Tokenless biometric electronic transactions using an audio signature to identify the transaction processor
 US6879966 2005-04-12 2001-03-22 Tokenless biometric electronic financial transactions via a third party identifier
 US6662166 2003-12-09 2001-06-11 Tokenless biometric electronic debit and credit transactions
 US6594376B2 2003-07-15
 US6594376 2003-07-15 2002-04-01 Tokenless electronic transaction system
 US6581042B2 2003-06-17
 US6581042 2003-06-17 2001-05-03 Tokenless biometric electronic check transactions
 US6397198B1 2002-05-28
 US6397198 2002-05-28 1999-07-20 Tokenless biometric electronic transactions using an audio signature to identify the transaction processor
 US6366682B1 2002-04-02
 US6366682 2002-04-02 1998-10-30 Tokenless electronic transaction system
 US6269348B1 2001-07-31
 US6269348 2001-07-31 1999-01-29 Tokenless biometric electronic debit and credit transactions
 US6230148B1 2001-05-08
 US6230148 2001-05-08 1999-01-29 Tokenless biometric electronic check transaction
 US6192142B1 2001-02-20
 US6192142 2001-02-20 1999-02-02 Tokenless biometric electronic stored value transactions
 US6154879 2000-11-28 1999-02-05 Tokenless biometric ATM access system
 US6012039 2000-01-04 1999-02-05 Tokenless biometric electronic rewards system
 US5870723 1999-02-09 1996-08-29 Tokenless biometric transaction authorization method and system
 US5838812 1998-11-17 1996-07-25 Tokenless biometric transaction authorization system
 US5805719 1998-09-08 1997-03-18 Tokenless identification of individuals
 US5802199 1998-09-01 1997-03-17 Use sensitive identification system
 US5764789 1998-06-09 1996-09-27 Tokenless biometric ATM access system
 US5615277 1997-03-25 1994-11-28 Tokenless security system for authorizing access to a secured computer system
 US5613012 1997-03-18 1995-05-17 Tokenless identification system for authorization of electronic transactions and electronic transmissions
 PT0912959T 2004-05-31 1996-05-17 SISTEMA DE IDENTIFICACAO SEM SUPORTE FISICO
 JP2003525478T2 2003-08-26 2000-01-31
 JP2003512656T2 2003-04-02 2000-01-31
 JP2003505769T2 2003-02-12 2000-07-20
 JP2002543533T2 2002-12-17 2000-02-02
 JP2002541533T2 2002-12-03 2000-01-31
 JP11511882T2 1999-10-12 1996-05-17
 ES2213774T3 2004-09-01 1996-05-17 SISTEMA DE IDENTIFICACION SIN INDICACION.
 EP1222583A1 2002-07-17 2000-07-20 TOKENLESS BIOMETRIC ELECTRONIC TRANSACTIONS USING AUDIO SIGNATURE
 EP1222582A4 2002-07-17 2000-02-02 TOKENLESS BIOMETRIC ELECTRONIC REWARDS SYSTEM
 EP1222582A1 2002-07-17 2000-02-02 TOKENLESS BIOMETRIC ELECTRONIC REWARDS SYSTEM
 EP1210678A1 2002-06-05 2000-01-31 TOKENLESS BIOMETRIC ATM ACCESS SYSTEM

EP1208489A1 2002-05-29 2000-01-31 TOKENLESS BIOMETRIC ELECTRONIC DEBIT AND CREDIT TRANSACTIONS

EP1151371A1 2001-11-07 2000-01-31 TOKENLESS BIOMETRIC ELECTRONIC CHECK TRANSACTIONS

EP0912959B1 2003-11-12 1996-05-17 TOKENLESS IDENTIFICATION SYSTEM

EP0912959A4 1999-05-06 1996-05-17

EP0912959A1 1999-05-06 1996-05-17 TOKENLESS IDENTIFICATION SYSTEM FOR AUTHORIZATION OF ELECTRONIC TRANSACTIONS AND ELECTRONIC TRANSMISSIONS

DK0912959T3 2004-03-15 1996-05-17 Identifikationssystem uden token

DE69630713T2 2004-12-02 1996-05-17 IDENTIFIKATIONSSYSTEM OHNE IDENTITÄTSMARKER

DE69630713C0 2003-12-18 1996-05-17 IDENTIFIKATIONSSYSTEM OHNE IDENTITÄTSMARKER

CN1542680A 2004-11-03 1996-05-17 Tokenless identification system for authorization of electronic transactions and electronic transmissions

CN1191027A 1998-08-19 1996-05-17 Tokenless identification system for authorization of electronic transactions and electronic transmissions

CN1152505C 2004-06-02 1996-05-17 Tokenless identification system for authorization of electronic transactions and electronic transmissions

CA2379835AA 2001-01-25 2000-07-20 TOKENLESS BIOMETRIC ELECTRONIC TRANSACTIONS USING AUDIO SIGNATURE

CA2362234AA 2000-11-09 2000-02-02 TOKENLESS BIOMETRIC ELECTRONIC REWARDS SYSTEM

CA2361405AA 2000-08-10 2000-01-31 TOKENLESS BIOMETRIC ATM ACCESS SYSTEM

CA2359899AA 2000-08-03 2000-01-31 TOKENLESS BIOMETRIC ELECTRONIC DEBIT AND CREDIT TRANSACTIONS

CA2359676AA 2000-08-03 2000-01-31 TOKENLESS BIOMETRIC ELECTRONIC CHECK TRANSACTIONS

CA2221321AA 1996-11-21 1996-05-17 TOKENLESS IDENTIFICATION SYSTEM FOR AUTHORIZATION OF ELECTRONIC TRANSACTIONS AND ELECTRONIC TRANSMISSIONS

BR9608580A 1999-01-05 1996-05-17 Sistema de computador para identificação voluntária sem fichas para determinar a identidade de um indivíduo a partir de um exame de pelo menos uma amostra biométrica e de um código de identificação e processos de identificação voluntária e sem fichas de indivíduos e autenticação da identificação e de busca rápida de pelo menos uma amostra biométrica

BR0012584A 2002-04-16 2000-07-20 Sistema de computador de identificação biométrica sem indicação magnética, e, método de identificação de uma entidade de processador de transação para um usuário de um sistema de computador de identificação biométrica sem indicação magnética

BR0008047A 2002-10-22 2000-01-31 Processo e dispositivo para acesso biométrico sem indicação magnética a contas financeiras em uma instituição

BR0008045A 2001-11-06 2000-02-02 Processos para autorização sem indicação magnética de uma transação de recompensa entre um emissor e um receptor e para processar transferência de unidades de recompensa eletrônicas sem indicação magnética para um receptor, e, dispositivo para transação sem indicação magnética de transferência eletrônica de unidades de recompensa para um receptor

BR0007801A 2002-02-05 2000-01-31 Processo para autorização sem indicação magnética de um pagamento eletrônico entre um pagador e um receptor, e, dispositivo de autorização de

pagamento eletrônico sem indicação magnética para transferir fundos de uma conta de crédito/débito de pagador para uma conta financeira de recebedor

BR0007797A 2002-02-05 2000-01-31 Processo para autorização de um cheque eletrônico sem indicação magnética entre um pagador e um recebedor, e, dispositivo para autorização de cheque eletrônico sem indicação magnética

AU6562498A1 1998-10-12 1998-03-17 Use sensitive tokenless identification system

AU5922696A1 1996-11-29 1996-05-17 Tokenless identification system for authorization of electronic transactions and electronic transmissions

AU4802397A1 1998-05-05 1997-09-29 Tokenless biometric automated teller machine access system

AU4329597A1 1998-03-19 1997-08-27 Tokenless biometric transaction authorization method and system

AU0185014A5 2002-02-25 2001-08-17 Tokenless biometric authorization of electronic communications

AU0063645A5 2001-02-05 2000-07-20 Tokenless biometric electronic transactions using audio signature

AU0036965A5 2000-11-17 2000-02-02 Tokenless biometric electronic rewards system

AU0034818A5 2000-08-25 2000-02-02 Tokenless biometric electronic stored value transactions

AU0034767A5 2000-08-25 2000-01-31 Tokenless biometric atm access system

AU0032181A5 2000-08-18 2000-01-31 Tokenless biometric electronic debit and credit transactions

AU0028644A5 2000-08-18 2000-01-31 Tokenless biometric electronic check transactions

AU0014588A5 2000-05-22 1999-10-29 Tokenless electronic transaction system

AT0254315E 2003-11-15 1996-05-17 IDENTIFIKATIONSSYSTEM OHNE IDENTITÄTSMARKER